the CANNON

March 31, 1981 | University of Toronto Engineering Society | Vol. III No. 8

Eng. Soc. to Host OEDC

The Engineering Society has been successful in its bid to host the 1982 Ontario Engineering Design Competition. All that remains is approval by the 1981-82 Council, which is expected at the April 7 meeting.

A proposal was made to the University of Waterloo Engineering Society, hosts of this year's competition, on March 17. At that time, Queen's University was also planning to make a bid for the OEDC. When Queen's heard Toronto was interested, they withdrew their bid, and Toronto was confirmed as hosts at the competition on March 21. Queen's hosted the first OEDC in 1980.

Joe Facca and John Voss, Vice-Presidents-Elect, who prepared the Toronto proposal, were very pleased with the turn of events. "The OEDC has been very successful in its short history, but it still needs publicity in order to gain momentum as an important annual event. We're the largest engineering school in Ontario. If we can't give the competition publicity and a bigh profile, no one can," remarked Voss.

Joe Facca stated that everyone he's spoken with is in full support of the endeavour. "Professor Hoeppner, director of the Cockburn Centre for Engineering Design, and Professor Cobbold, of the Institude of Biomedical Engineering, have both expressed their support. So has the Faculty Office, and some alumni I've talked to."

The competition will be held in March, 1982. The location will be some place on campus, possibly Hart House. Definite plans have not yet been made. A special committee will be struck in Council to plan and co-ordinate the event. Voss stressed that any member of the Society can get involved on the committee. "Not only are they welcome, they'll be needed! We'll need people to arrange accommodation, book rooms and facilities, solicit funds, find judges, act as hosts and guides, and a dozen other things. There's lots of work to do." Most of the planning will take place over the summer months.

By holding the competition on campus, the Society hopes that members of the university community, and even engineering students not directly involved with the competition, mgith be encouraged to drop in to hera the seminars and view the design displays, and thereby gain a better understanding of the abilities of today's engineering students.

Preliminary estimates suggest that approximately one hundred engineers from Ontario universities will attend the competition.

Albert Li and Lawrence Kwan, Mech 8T2, explain their design to a judge at the 1981 Ontario Engineering Design Competition held in Waterloo. The pair won the Corporate Design Category for the second straight year.

Toronto Pair Wins at OEDC

On Friday, March 20, competitors, judges, observers and officials met to commence the seonc annual Ontario Engineering Design Competition. The competition was held over a three day period at the University of Waterloo.

Four areas of competition were organized: the Entrepreneurial Design where entrants were to design or build a product not currently available in Canada; the Corporate Design class wherein competitors solved a problem from several submitted by specific companies; the Explanatory Communication class that required the explanation of socio-tecbnical issues for the public's benefit; and the Editorial Communications class which required the formulation of a policy concerning some brand of engineering and its effect on Canada. Entrants came from most of the engineering schools of Ontario. Sponsoring the competitions were such industries as Alcan Canada Ltd., Volker-Craig Ltd., Northern Telecom Canada, Ontario Hydro and Gulf Canada.

Many of the projects for the entrepreneur or corporate design class were impressive, with devices such as a marine rescue jacket, a microprocessor controlled energy management system, a digital AC line to DC motor control, and a walking beam mechanism; the last being a mechanism to transport and regroup items between two parallel conveyers. The walking beam mechanism was designed by Albert Li and Lawrence Kwan of the University of Toronto (Mech 8T2).

A range of topics were included in the Communications category, from an engineering policy on the regulation of SO_2 emissions, the source of acid rain, to resouce development in Canada's far north, to the impact of robotics on our society.

The judges in all classes included University engineering professors, engineers from industry, APEO officials and representatives from the media.

When the final judging was complete, the winners were announced at an awards dinner. The winners of the entrepreneur division were Cedomir Bekic and Kermin Wong from Windsor for the design of a subscription television service. These two immediately sold the rights to

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Kapica Sweeps Elections

Results of the Engineering Society elections, held March 5 and 6, have been tabulated and the winners have been declared. The ticket headed by Diane Kapica swept all positions.

Kapica herself garnered 53 percent of the vote in the four-way race for the presidency. John Voss was elected Vice-President: Administration with 55 percent, Joe Facca V.P. Activities with 65 percent, Barry Levine Treasurer with 56 percent and Margie Bawden won the Secretary's post with 58 percent.

Three tickets ran in the election, as did an individual candidate for president. Although Eng. Soc election procedures do not require voters to accept or reject entire slates, it appeared that most of tbe voting followed that line. Tbe members of each slate received approximately the same proportion of the popular vote.

The new executive assumes office at the Joint Council Meeting this afternoon at 5:00 in GB 202.

Class representatives for next year's third and fourth year classes have also been elected. Joe Facca is currently arranging organizational meetings for each of the Society's standing committees, to explain to the new reps the functions of the committees, and to determine candidates for the committee chairs.

Applications for appointed positions within the Society are being accepted until Friday, April 3. Interested people should contact Joe Facca. Council will make the appointments for the 1981-82 term at the final spring meeting on April 7.

Spring is election season, and other positions of importance of the society are also being decided. Most course clubs have chosen their chairman, and these people also take office with tonight's meeting.

The engineering SAC directors were chosen March 11 and 12. They are Vicken Aharonian, Michael Nettleton, Andrew Alberti, Alan Lechem, Greg Milovsky, and Emil Fung. Milovsky and Fung are new to Council, but Alberti and Lechem have sat as class reps on this year's Council, and Aharonian and Nettleton are both veteran SAC directors. Nettleton is Speaker of this year's Council, and Aharonian is presently SAC chairman.

This Month

the CANNON

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THE CANNON is a publication of the University of Toronto Engineering Society. It is published monthly to announce Eng. Soc. events, discuss Faculty and University matters, and present technical information of interest to Engineering undergraduates. Subscriptions are available, call Ella at 978-2917. Anyone interested in helping with THE CANNON is most welcome.

THE CANNON encourages submissions; please type or write legibly. Deadline for articles is one week before publication date, notices and letters by 5:00 p.m. the Friday prior to publication. Comments on THE CANNON or articles appearing in it are appreciated. The editors reserve the right to edit letters for brevity.

Wait 'Til Next Year

by Diane Kapica
President-Elect

The five of us, the newly-elected officers of the Engineering Society, would like to thank you for your support offered to us in the elections.

Our campaign slogan was "Take Pride in Skule", and in our plans for the next year, we hope to accomplish just that. Engineers at U. of T. have the ability to execute a variety of well-organized activities, that, more often than not, are enjoyed by the entire University community. Homecoming is the most striking example of this. Those who attended the parade, football game or pub had a good time. High profile events of this type will give engineers recognition for what we do well. The executive hopes to add more events to Godiva Week along with the Chariot Race to provide an atmosphere of close-knit camaraderie in the Faculty. We also plan on giving due recognition to teams that perform well. Winning the Mulock Cup for the interfaculty football championship, or the T.A. Reed Trophy for having the highest number of athletic points in the University are achievements that should be publicized, not only to engineers but also around campus.

We realize that professional development as an engineer is also of great importance to our education at UofT. To this end, we hope to host the Ontario Engineering Design Competition next year. The competition provides students with the opportunity to solve current problems in industry, or to design their own solutions to a general problem. The executive also hopes to invite prominent industrialists as speakers on subjects of general interest to engineers. These speakers should provide some insight on the direction that you may take after graduation.

We would appreciate any ideas you may have for events or activities next year. You can help by submitting articles for the Cannon or the Toike, if you are so inclined. Your inputs will make a better Engineering Society. Remember, the Engineering Society is what you make of it; if you would like to help or to just come and talk, we would like to hear from you. Together we'll make next year a more eojoyable one!

Help from my Friends

I came into this job as Cannon editor with absolutely no newspaper experience. I'd never even watched a newspaper being put together. All I had was a few ideas on what I thougbt the Cannon should be, an eagerness to try and make it that, and a lot of friends.

Tbe ideas were helpful. It was important to make the Cannon more dependable, so we followed a pre-determined publishing schedule. We wanted a higher profile, so we distributed copies at campus locations such as Hart House, Sid Smith, and McLennan Physics. We wanted technical articles students could read, so we got students to write them. To a great degree, these ideas worked. The paper is now more widely recognized than it has ever been, and we've developed a good advertising base. We've done a good job keeping people informed about what is going on around here.

It's a good thing I was eager, because we were all new to the game. I got the layout for the first two issues by copying other newspapers. There was no one to tell us how to do it, so we had to teach ourselves and learn by our mistakes. It was a slow and difficult effort, but it paid off. All it took was a bit of perseverance.

Which brings me to the most important resource I had: friends. Right from the beginning there was a small group of people who shared my hopes for the paper, and they were willing to work very hard to help me, and to help the Cannon. Their names have regularly appeared on the masthead, but they haven't nearly received the thanks and recognition for the work they've done.

In no particular order, I'd like to thank the following friends. Thanks to Steve Roberts for his creative mind and his trumpet playing at 4:00 a.m. Thanks to Randy Sinukoff, who as Communications chairman looked after the little things, like money, and who split the early morning distribution duties with Steve. Thanks to John Samochin for his active interest, and bis willingness to accept an assignment. Thanks to Rick Botman for his written work. If more people submitted articles like Rick, I would never have had trouble finding copy. Thanks to June Li for cutting, pasting, and correcting, and typing, and type-setting, and doing anything else she could. And, finally, thanks to Daryl Wilson for his insights into Engineering and the Enviorment.

I firmly believe that the Cannon is very importaot to this Society. Nearly one-hundred years ago we started out as a "learned Society"—a publisher of technical material for students of the School of Practical Sciences when no other library existed for tbeir use. Over the years, tbe Engineering Society's focus has become more social. While there is nothing wrong with that, per se, it is important that we realize that studeots must still accept the responsibility for a large part of their own education. The Cannon is a practical, realistic attempt by engineering students to inform one another about the matters important to us, educational and technical as well as social.

For the Cannon to continue to thrive, people must get involved with it. I don't mean that everyone has to come out and offer their services as reporters—who would make the news in such a case? But people have to overcome their fear of exposure. Ask any of the people who've written for the paper this year and see if it's painful to have your name in print. Fourth year students should synopsize their theses for the Cannon. Many engineering students have technical hobbies that might make interesting reading—solar energy for example. If you play on a team, tell us how you're doing. The Toike died because no ooe would help produce it. Is the Cannon no more wortby? An editor shouldn't have to depend solely on friends.

Have a good summer.

Engineering as a Discipline

by Daryl Wilson
Chem Eng 8T2

Engineers have a key role to play in determining man's destiny...With the technological resources at hand right now, we could he at the dawning of the first truly humane world civilization in history...With the size of the world's population, and with looming energy prohiems, we could also he on the verge of giohal disaster...We have reached a point where we cannot turn onr hacks on hard technology. To stop technology would he not only foolish hut disastrous. As engineers we stand in an nniquely advantageous position to know and to say what is and what is not possihie. It is oor duty, and it should he our aim, to enahle people to think ahoot and prepare for the technology of the future.

The above statement appeared in the February 23rd issue of Engineering, quoting C.A. Dagenais, chairman of the SNC Group. Increasing public awareness and concern regarding issues of engineering placed special demands on engineers in the past decade. Demands from industry for personnel with our training is comfortably high, and from the perspective of an undergraduate. "all is well". But the overtones of the statemeot quoted above relate to a different sort of demand. Beyond technically innovative and proficient engineers, the call is for people with a view for the direction of society at large. In a time of apparent prosperity then, there is wisdom in reflecting on our preparedness for this calling.

Basically engineering has the task of forming and manipulating the physical environment,for the betterment of the human condition. Since Engineering's early days in Toronto, as the School of Practical Science, the task has not chaoged; but western society and culture has. As we scrutinize, analyze, and organize the physical environment,we, of necessity, deal with all of the other aspects of life and culture. Social, insitutional, political economic and aesthetic factors are in a constant state of change, and so must our outlook change. In an essay in "Cold Iron and Lady Godiva", President Ham, (then Dean of Engineering) illustrates this integral role of Applied Science and Engineering as a quadrant in a nest of concentric circles. The centre of tbese circles is the humanities. Clearly, as much as it may be distasteful to some, engineers must realize a vital link with the "artsies".

As we look at the discipline of engineering however, the hub position of the humanities is not at all evident. Often with disdain and a sense of drudgery, we look through calendars to squeeze a noo-technical elective into a timetable crowded by applied science and math-oriented courses. With the explosion of technological information in the past centruy, we cannoot solely blame our educators for this problem. Perhaps it is not so much "culture" courses we need, as much as an understanding of the philosophy that comes packaged with mainstream engineering courses. The philosophy is not taught outright, but tacitly held by professors and textbooks. While the ioteraction of technology and culture is acknowledged, the primary focus of attention is depicted in Figure 1. Technology—mao dealing in a formative way with the pbysical environment —is normed and determined primarily by the engineer's understanding of physical laws and phenomena, and the economic feasibility of their application.

Lest we be over-critical at this point, it is important to concede that the marriage of technology and science is not a bad thing, nor is the recognition of economic factors. Problems have arisen, rather, because of their installation as the basis of our work, hence displacing transcendent human realities.

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Eng. Soc. News

Eng. Law Course Moves to SCS

by John Samochin
Eng Sci 8T3

As most graduating engineering students are aware, the Association of Professional Engineers of Ontario is initiating a set of examinations as part of the "Professional Engineer" registration process. One exam scrutinizes professional practice and engineering ethics while the other deals with engineering law and professional responsibility.

Presently, the Faculty of Applied Science and Engineering offers a fourth year elective, APS 402, called "Engineering Law and Professional Ethics". The course primarily addresses selected topics of law relevant to the practice of engineering, including contract and commercial law, forms of business organizations, and the duties and liabilities of engineers. These are the same areas which the APEO will test for in its law examination.

Starting with the academic year 1981-82, however, the Faculty has removed this engineering law course from the undergraduate calendar and placed it in the School of Continuing Studies as an evening/part-time course.

Student reaction to the announcement has been puzzlement at the discontinuation of the course at the undergraduate level. Simon Monk (IND 8T1), Executive Faculty Council representative, remarked, "Only at a university would they come up with such illogic as 'we will have a great demand for this service; therefore we will discontinue it,'" He added that in several years time, the University of Toronto will probably re-introduce it to the undergraduate curriculum as a core course because of the need of modern engineers for legal expertise. Two other students, Susan Samuels (CHEM 8T1) and Linda Smith (IND 8T1), both taking the elective, agreed that the course is an excellent one. They point out, however, that it is most effective because of its small class size and the resulting participation of most students in discussions.

Mr. D. Marston, who currently instructs the course, is preparing a textbook called "Law for Professional Engineers", which is the primary recommended text for the APEO's law exam. Mr. Marston stated that the intention of transferring the course into the School of Continuing Studies was to make it available to more candidates for the APEO exam rather than to just a limited enrollment of undergraduate engineers. Many new engineering graduates' work in the Toronto area so that the course will become more accessible in general. Mr. Marston noted that with the new APEO regulations, there would be a tremendous increase in demand for the course, and that a redundancy would exist in offering both a fourth year engineering law course and an identical course in the SCS. "The text was written with the view of simplifying the areas of engineering law," said Marston, "so that an Engineer studying law should be successful in the examination." He added that a person both reading the text and attending a lecture course has an advantage, but whether or not he is actually disadvantaged if not attending lectures remains to be seen; the classroom's helpful in removing legal misconceptions that some engineers have. To be effective, though, the classes must be kept small.

Associate Dean of the Faculty W.A. Miller was sympathetic to the feeling of the undergraduate students about the transfer of the engineering law elective. He pointed out, however, that the course presently has a limited enrollment, and with the new APEO exam, he could envision almost the entire fourth year wanting to take the course. "Since the enrollment is limited to 90, this would mean turning away almost 300 students. To expand the course, the problem becomes one of the resources." In the SCS, the fees collected from the students pay for the course directly, so that the size of the course is geared to demand. This was the only reasonable solution because the faculty simply does not have the funding to expand the course at the undergraduate level.

Plans are also being made for complementary engineering law correspondence course for those not in the Toronto area. If all goes as scheduled, the correspondence course should start with the SCS engineering law course this fall. Similar plans are being made for an engineering ethics course, but because there was no previous course a simple transition is not possible. Dean Miller also

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Aeros Soar

A team from Aerospace walked away with the top prize of $30 at the Engineering Athletic Association volleyball tournament held March 22. Civil 8T2 was second; Mechanical 8T2 was third.

The Aerospace unit played as a team all year in interfaculty play, and most people credit this experience for their win.

The tournament took about three weeks to arranged, facilties being difficult to book. Joe Facca, E.A.A. Volleyball commissioner and organizer of the event, says the biggest disappointment was that two teams defaulted from the competition for not showing up. Originally nine teams were scheduled to compete in a championship/consolation type tournament. This was hastily converted to a round robin when the two didn't show up.

Facca's suggestions for next year's tournament might warn against scheduling the event for the morning after Grad Ball. Some people, it seems, have difficulty getting out of bed.

Yearbooks On Sale

The Book of Skule 8T1, this year's edition of the Engineering yearbook, is now on sale. It is available for $3.50 from class reps or the Engineering Stores.

According to editor Brian Danylkiw, this year's book is trying for a more comprehensive presentation than previous editions. Rather than be just a picture book of the year's events, the 1981 edition will include descriptions of the histories of many of the Society's traditional events, such as Skule Nite and the Chariot Race. The origins of these events are, in many cases, quite obscure, and some date back to the turn of the century.

In an effort to keep costs down, the printing has been contracted with a local printer rather than a yearbook publishing house. This means more work for Danylkiw and his staff, but a better production schedule and lower costs to yearbook buyers.

Also new this year is the availability of a mailer service. Yearbooks should arrived during exams, and in the event that students will have left Toronto for the summer, $1.50 will get the book mailed to their summer address.

First year students are reminded that they purchased a book with part of their dues on Orientation Day.

The Book of Skule 8T1 is shaping up to be a useful addition to the bookshelf, and one that will become more valuable in years to come.

Varsity Levy Challenged

Last year, along with $922 for tuition, each engineering student paid $130 in incidental fees. These fees included payments to SAC, Hart House, the Health Services, and the Engineering Society. Incidental fees must be paid—students who refuse to pay are denied admission to the University. Part of this incidental $130 is a levy of $1.25 which goes to the undergraduate newspaper, *The Varsity*.

Recently, a petition has surfaced on campus. It demands the Varsity Board of Directors to hold a student referendum questioning the continuance of mandatory student subsidization of *The Varsity*. Interestingly, the petition, in different forms but with the same purpose, arose simultaneously but independently in two areas on the campus.

Helmut Biemann, a student at St. Michael's College, and Mike Nettleton, a third year industrial engineer, both started their actions after the recent SAC elections. Nettleton's petition makes reference to "continued irresponsible news coverage and blatant biased 'reporting', with specific reference to the recent SAC election". It demands that "*The Varsity* show cause why it should continue to be subsidized by students if the responsibility it has to the entire student body is repeatedly abused in such a manner."

Nettleton speaks with experience. A former editor of the *Toike Oike*, he has also written for *the newspaper*, and *The Strand*, the student paper of Victoria College. He tells of one personal experience where he covered for *the newspaper* an address by President Ham which was also attended by a Varsity reporter. "*The Varsity* took one remark by the President and blew it entirely out of proportion, making it sound like the theme of the address, while ignoring most of what he really had to say". Nettleton says reporting like this makes him feel cheated, "especially when I'm forced to pay for it."

Nettleton seeks two thousand signatures for his petition. No more than five hundred will be counted from a given constituency. Upon receipt of such a petition, the Varsity Board of Directors is required to institute the referendum called for in the document, and is bound by the outcome of the referendum.

The example of *the newspaper* proves that a campus paper does not need a student levy to finance its operation, claims Nettleton. "I don't know how *The Varsity* spends its money!" He thinks it's time *The Varsity* stopped trying to compete with *the newspaper* and settled down to constructively report campus news.

Nettleton is a Faculty Council member and Speaker of the Engineering Society Council. He stresses, however, that the petition is a personal activity and is in no way related to his official capacity within the Society. He is not actively seeking Society support, but "it would be nice". What he really needs are signatures, and lots of them. If a change were to occur, it wouldn't be until next year—probably too late for Mike Nettleton to benefit. But, he says, "it's the principle."

Prof. K.C. Smith receives a commemorative plaque from Jim Gillanders, chairman of the Electrical Club, at the Club's Spring Dinner.

KC Steps Down

by Rick Botman
Elec Eng 8T2

Five years as Chairman of what he terms "the largest, most diverse and accomplished Department of Electrical Engineering in Canada" has left Dr. Kenneth Carless Smith tired and frustrated, but not beaten. As he ends his term in office this June, Professor Smith (known to all as 'K.C.') is eager to return to the world of circuits and seminars, leaving the post of Chairman to H.W. Smith, Professor with the Systems Control Group. What he leaves behind is a department presently stable, but potentially in danger of sacrificing its high standards.

Administering to the needs of a progressive University department in the face of budget cutbacks and inflation is often a job of, in Smith's word's, "finding the ultimate rip-off." Even a status quo maintenance budget must be justified continuously before Simcoe Hall, while at the same time, the demands of staff students and equipment must be dealt with.

Not all of the Chairman's concerns are strictly financial of course, as the process of academia requires constant attention. A large volume of research is being conducted within or with the cooperation of the department, and much of this work is co-ordinated through the office of the Chairman. Program development and the daily functioning of lectures, labs and seminars are important concerns, especially in light of the rapidly evolving technology and the strain that this places on the equipment budget. Not least, the Chairman represents the department to the outside world and must cope with the occasional media inquiry.

Professor Smith has not ignored his personal academic responsibilites while tending to departmental affairs. He has been able to maintain a fair flux of published material, while work on a jointly authored text book will be complete early this summer. He serves on a micro-electric task force for the province and took time off during the summer of 1979 for a two week information exchange to China. Now and then he's also taken the time to lecture a course or two.

In any academic institution the major resource is the brain bank which embodies the knowledge and processess taught here—the teachers. K.C. Smith sees his job as "letting the staff do its job", making sure that they have the suport necessary to prevent them from wasting their valuable time. Far and away the largest chunk of the deparment's budget goes towards staff slaries, and if the staff has to spend time obtaining equipment or writing reports to defend their expenses to someone, we the taxpayers and we the students get effectively ripped off. On the other hand, tenured academics are notorious for their aggressive ignorance of economic realities. K.C. Smith feels that he has helped sustain an autonomous and capable staff, but that it is being increasingly threatened by internal bickering, overcrowding limited resources and other syptoms of underfunding. In light of the whopping salaries offered by industry , finding and holding onto first-rate staff might become a serious problem for the new Chairman.

One of K.C. Smith's favourite laments is the effect of budget cuts on any sort of equipment maintenance program. With an annual expenditure of less than 7 percent of the depreciation of the equipment, it has been the occasional infusion of special funds or begged outside aid that has kept the patch cords patched.

Whither will this great guru of circuit gain go? For the moment, K.C. Smith won't even entertain the thought of following in the footsteps of his predeccesors—Gordon Slemon, presently Dean of the Faculty and James Ham, the President of the University. He'll be happy to doff the white hardhat of management for the mortarboard of academia, and that only leaves the Electrical Club with the problem of finding someone to fill Santa's red cap, for the next Christmas smoker.

ATHLETIC AWARDS

Once again, our fine Engineering athletics were honoured at the annual S-Dance, Friday, March 13 in the Great Hall of Hart House.

Listed below are some of the athletes who received awards at the dance. We had many winners this year, and once again we look like strong contenders for the T.A. Reed trophy for men, and the women's Marie Park trophy. These are awarded annually to the faculty or college receiving the most points for participation and success in interfaculty athletics.

The E.A.A. would like to extend special congratulations to the men's football team for winning the Mulock Cup for the first time since 1956!

Athletic Award Winners

Men's Athletic
Football Champions 1980-81
Swim Meet Champions 1980-81
B Volleyball Champions 1980-81
Senior Basketball Champions 1979-80
Ski Meet Champions 1979-80
D. Volleyball Finalists 1979-80
Waterpolo Finalists 1979-80

Women's Athletics
Volleyball Champions 1979-80

Individual Awards
Men's Swim Meet 1980-81
Richard Hooper
David LeGresley
Kirk Allan

Men's Track and Field Meet 1980-81
Richard Marini

Men's Ski Meet 1979-80
Eugene Trusler
Bob Calvert

Women's Ski Meet 1979-80
Sandy Cook

J.R. Gilley Trophy
Raffaele Annetta, Judith Vosko

Professor W.J.T. Wright Trophy
Joe Halpert, Kathy Dumanski

Class of 2T1 Trophy
Kirk Allan, Dale Kerr

Chenille S

First Year
Raffaele Annetta, Maria Drangova, Judith Vosko

Second Year
Colin Doyle, Joe Halpert, Marc Hamel, Gary Ito, Nitin Kawale, Pamela Selby, Richard Sewards, Umberto Testaguzza, Hilary Watson, Karen Wright.

Third Year
Ken Baker, Michael Bate, Anita Bertol, Richard Botman, Bob Calvert, John Campbell, David Chow, Eric Hebert, Laurie Hilbig, Thomas Kadar, June Li, Audrey Mascarenhas, Benjamin Poblete, Mark Thompson

Fourth Year
L.J. Ciccotelli, Edward Cocchiarella, Godwin Cutter, Dave Douse, Gary Driver, Frank Giannone, Nancy Hill, Lorne Horton, Kenneth Kettle, Teresa Kita, Joseph Klement, John Lin, Oswald Luters, Brian Lynam, Richard Marini, Paul Matsuba, Ted McHenry, Daniel McNeill, Owen Pellew, Jeff Richardson, Carolyne Sidey, Robert Star, Alisdair Stark, Michael Turbach, Rick Weston, Andreas Woerle, Clinton Yanz, Johnathan Rose, Tasso Vourlas.

Bronze S
Ian Ashton, Paul Kolisnyk, Mike MacNeill, David LeGresley, Patricia Lepper, Howard Simon, Kenneth Fair, Richard Hooper, Ed Kalinowski.

Special Bronze S
Jim Barrett.

Concrete Canoes Float?

Nearly as well as any other canoe

by Les Medd
University of Toronto
Concrete Canoe Club

"Concrete canoes — is that a joke?"

This is the question most frequently asked whenever the subject of concrete canoeing is brought up. The answer, of course, is no — there really and truly is a club called the University of Toronto Concrete Canoe Club (UTCCC) which builds and, yes, even races these canoes in competitions in Canada and the United States.

The club was formed to provide students with a chance to "get their hands dirty" by working with concrete, giving them insight into the properties and diverse nature of concrete as a construction material.

The students, with the help and advice of professors, must build a mold from scratch, then cast the canoes inside it. Because there are no real 'experts' involved in the actual construction, the students are encouraged to contribute their ideas and solutions to the design and to the numerous unexpected problems that are encountered. The final result is a streamlined, finely finished craft which is barely distinguishable from a normal canoe in terms of shape, performance and even weight.

Another favourite question asked of the members is, "How does it float?" The canoe's skin consists of a thin layer (less than 1 cm) of concrete, covering a wire mesh used to provide additional strength. The mix must be designed to be light, yet strong and flexible. This year, flyash will be used as an aggregate instead of sand—hopefully, this innovation will give the UTCCC a strong competitive edge.

Funding for the club is supplied by the Engineering Society, the Civil Club, the Department of Civil Engineering, and Rohm and Haas Company has provided some of the polymers used. These funds allow the group to participate in competitions where awards are presented for the best canoe design, and the fastest canoes. Participants come from across the States in the spring (usually early in May), giving the students an excellent opportunity to learn more about other universities and meet other students their own age. The competitions are of a very friendly nature, allowing the experienced and beginning canoeists to show off their talents, the key being active involvement.

Anyone who is interested and willing to offer their efforts and talents is invited to join the club and take part in a valuable learning experience. For further information, contact Rick Mangotich or Les Medd at 960-6136.

Anyone is welcome to come and help the University of Toronto Concrete Canoe Club, and "get their hands dirty" designing with concrete.

Engineering Society Appointments 1981-82

Applications are being sought for the following appointed positions on the 1981-82 Engineering Society Executive:

1) Blue and Gold Chairman
2) Communications Committee Chairman
3) Employment Committee Chairman
4) Fourth Year Committee Chairman (must be class of 8T2)
5) Professional Development Committee Chairman
6) SAC Committee Chairman
7) Social committee Chairman
8) Women's Committee Chairman
9) Executive Faculty Council Representative
10) Speaker of Council
11) Cannon Editor
12) Toike Oike Editor
13) Book of Skule Editor
14) Handbook/Calendar Editor
15) Engineering Society Archivist
16) Engineering Stores Manager(s)
17) Publications Business Manager(s)

Qualified candidates for positions 1 to 10 must be class representatives elected for the 1981-82 term of office. Members of the Society who are not class reps are encouraged to get involved in Society affairs by working with a committee that interests them. Check the calendar in the Engineering Society offices for the time and location of committee meetings.

Applications must be submitted to the Vice-President Activities by April 3, 1981. Appointments will be made by Council on April 7, 1981.

"Respice Finem"

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When it is all boiled down, engineering is people taking risks in manipulating the environment, for the betterment of **people.** Risk may be measured and weighed to a great degree; but people cannot.

The dangers which arise from our displaced philosophy, then are threefold: 1) The prominent place given to logical rigour and mathematical exactitude leads to a constricted view of reality, which, when held as the true and full picture of life and culture, inevitably cramps innovative and imaginative hypothesis, which is so important to us as problem solvers; 2) Technology becomes self-serving and is motivated by a compulsive need for perfecting—a "bigger and better" syndrome; 3) Technology becomes the servant of economic powers, rather than the tool of people. The measure of responsibility which engineers have in present day crises (whether in the environment or energy) and in public dialogue on technological issues is the measure that they have taken the course outlined by the three points above.

Before we conclude, it is necessary to make some positive comments. As the eighties are upon us, we find the engineering community well recovered from the onslaught of environmentalists, and the guilt of the public's pointing finger. In their typical way, (as men of action as opposed to men of philosophy) they have responded; they are doing something about it! As undergraduates, we encounter unique opportunities to share in innovative sollution to many critical problems. What is more necessary for us, however, is the realization of the roots of our present crisis in culture as well as in the physical environment. Otherwise, we are condemned to repeat the errors of the past—errors which were not caused by miscalculation or lack of funds, but by a dislocated philosophical perspective. Briefly, we must realize that mathematics and science are not the frame for reality nor the totality of our calling. Secondly, we must attempt to strengthen the bonds which we have with other disciplines. Thirdly, intensify dialogue with the public to understand the critical interaction of culture and technology. Finally, the responsibility of engineers to people, rather than primarily to economic goals, is essential.

Is Dagenais right? What is your perspective? Is it our job to inform and educate people, or to listen as well? We are ill-prepared as guardians of destiny, if we are incapable of communicating with those we claim to aid. After carefully defining the discipline of engineering, together with its philospohical underpinnings, comes the task of assessing our role in society. As the complexity and dimensions of technology increase, consideration of this fact becomes more needful. The import of our motto, "Scite Et Strenue" —"Skillfully and Vigourously" has been abundantly realized in analysis and synthesis. The eighties are a time to "consider the end" of our action—"Respice Finem".

figure 1

Technology—man dealing in a formative way with the physical environment—is normed and determined primarily by the engineer's understanding of physical laws and phenomena, and the economic feasibility of their application.

Reference.

Cofd Iron and Lady Godiva, Robin S. Harris and Ian Montagnes, eds. University of Toronto Press, 1973.

The Engineering Society

A Manageable Bureaucracy

Earlier this month, the Engineering Society elected it's five officers for the 1981-82 term of office. The positions of President, Vice-President: Administration, Vice-President:Activities, Treasurer, and Secretary were contested. Class representatives to the Engineering Society Council and Faculty Council have also been chosen in second and third year classes. (Students in first year will elect their representatives in the fall.) Have you ever wondered what these people do, and how this bureaucracy called the "Engineering Society" works?

It's Easy!

The flow diagram illustrated in figure 1 may seem a little maze-like at first glance, but on closer examination it becomes quite comprehensible.

Each person, or group of people, is responsible to the group above, ultimate responsibility lying with the President. All levels of the organization are responsible to the rest of the Engineering Society Council, and through the class reps, to the Society at large.

President

As in most organizations, the President is responsible for nothing in particular, but for everything in general. Primarily, the President co-ordinates the efforts of those under him. He is voting member of all Standing and Special Committees of Council, and represents the Society on all suitable occasions. He is a member of the Council of Presidents at UofT (COPOUT) and of Faculty Council. In essence, the buck stopes here: problems affecting the Society from within or without are the responsibility of the President.

VP: Admin.

The VicePresident:Administration is second in command and assumes the President's responsibilities in his temporary absence. He is responsible for all financial and business affairs of the Society, such as its insurance policies, its paid employees, and the Engineering Stores. In conjunction with the Treasurer and the Executive Committee, he prepares the Society's operating budget. The V.P.:Admin. is also a voting member of all the Committees of Council.

VP: Activities

The Vice-President:Activities co-ordinates the work of the Standing and Special Committees of Council, the Affiliates (the Engineering Athletic Association and the course clubs), and the Faculty Council reps, through the Executive Faculty Council rep (EFCR). He oversees "all cultural, technical, educational, athletic, and social activities of the Society".

'Skule Spirit' is largely his department, and his work is most visible through events such as Orientation Week, Godiva Week, the Band, and the BFC. He is third in command, and is also a voting member of all Standing and Special committees of Council.

Treasurer

The Treasurer must keep the financial books of the society, in accordance with legal requirements. He is responsible for informing Council of its financial status, and must submit the Society's books for audit at the end of the fiscal year.

Secretary

The Secretary keeps the records of the Society, its minutes and archives. He is responsible for the business of Council, such as reserving Council chambers for meetings, notifying members of meetings, and the like.

Council

Most of the work of the Council is done by the appropriate committee. As shown in the diagram, there are nine standing committees, each responsible for a specific area of Society activity. Every class rep is required to be a member of a committee, although response to this requirement is generally poor. Special committees are created by Council when a specific need arises.

Faculty Council

Student representatives also have seats on Faculty Council, the administrative body of the Faculty of Applied Science and Engineering. One Faculty Council rep, usually a senior student, is appointed Executive Faculty Council Rep. He is in charge of the student reps, and is the official liason between the Engineering Society Council and the Faculty Council.

The Society elects six SAC directors in a general election in March. These are our representatives on the SAC Board of Directors. One SAC director is appointed chairman of the SAC Committee.

Executive

The five elected officers, the chairman of the standing and special committees, the EFCR, and the chairman of the Affiliates form the Executive Committee of the Society. This corresponds to a parliamentary cabinet, and serves to make most of the policy decisions. The Engineering Alumni Association and the Faculty each appoint a representative to the Executive Committee, but they are not enfranchised.

Meetings

Both the Executive Committee and Council meet at least once a month. Other committees meet as often as necessary to conduct their business. Meetings of Council are conducted by a Speaker, appointed from among members of Council, whose job it is to control debate.

Get Involved

Members of the Society who are not elected to Council can still get involved in the Society, as many important positions within the organization are filled by appointment from the Society at large. The editors of Society publications, the BFC chief, the Chief Attilator, the leader of the LGMB, and the student manager of the Engineering Stores are all appointed in this manner.

Society members are welcome to attend meetings of Council or its committees. While they do not have a vote, they do have the right to speak from the floor and make their opinions known, subject to the rules of order of Council! as imposed by the Speaker.

Even a brief overview such as this makes the operation of the Society much more easily understood. This organization is a workable one, and it provides for good student representation in the decision making process. Anyone with an interest can get involved in the Engineering Society. It is, in fact, a manageable bureaucracy.

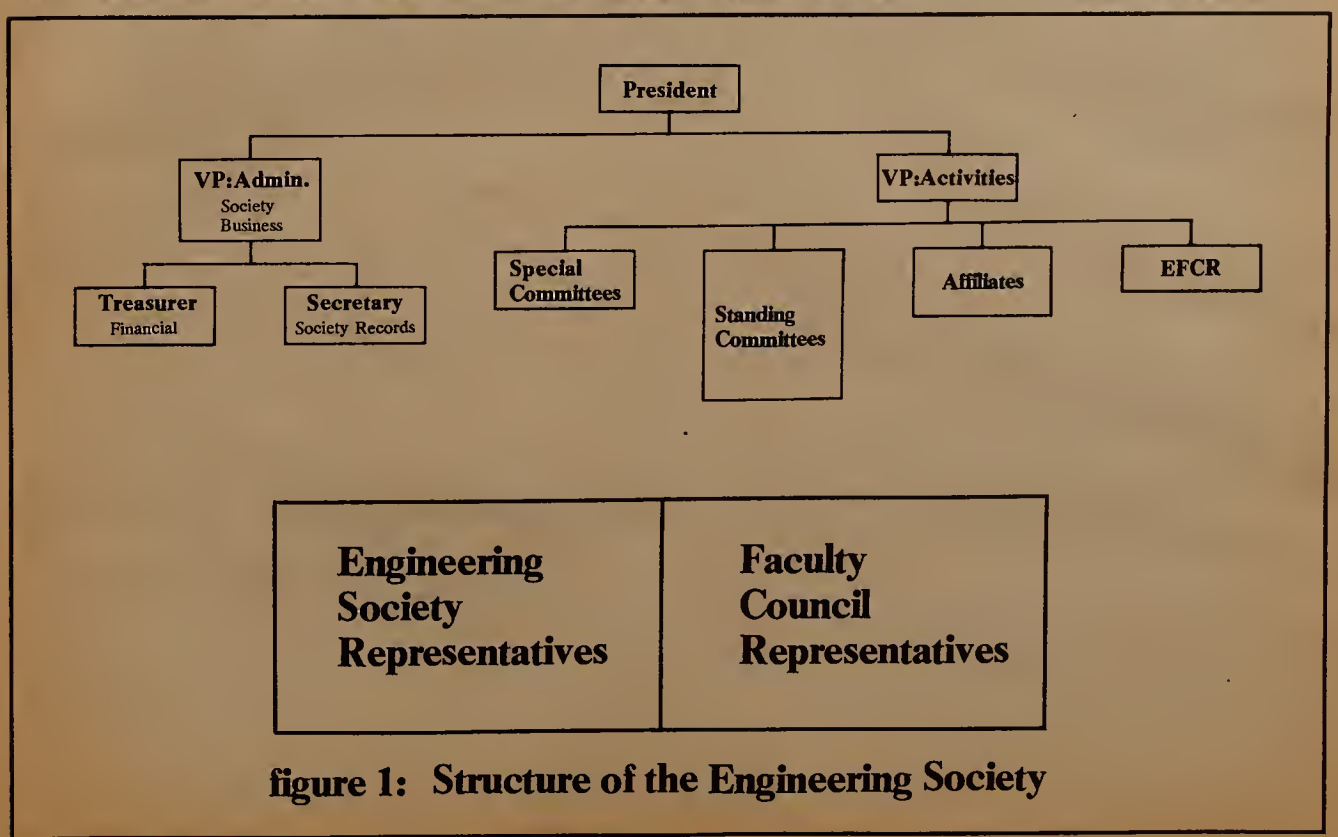

figure 1: Structure of the Engineering Society

Engineering This Month

If you are organizing an event, or know of one, that would be of specific interest to Eng. Soc. members, please drop a short note about it in the Tiny Toike box in the Society offices or contact Ella at 978-2917. It will be listed here free of charge.

Tuesday, March 31
Joint Council Meeting

The final meeting of the 1980-81 Council, and the inaugural meeting of the 1981-82 Council take place tonight at 5:00 p.m. in GB202. Please be on time.

Friday, April 3
Eng. Soc Appointments

Applications for appointed positions on the 1981-82 Engineering Society must be submitted by 5:00 p.m. today to Joe Facca, Vice-President: Activities.

Pub

Nurses and Engineers get together for a Last Chance Pub, 8:00 p.m. at Dr. John's. Party now before it's too late.

Tuesday, April 7
Council Meeting

The final spring meeting of the 1981-82 Council takes place tonight at 5:00 p.m. in GB202. Please be prompt; there is important business to attend to.

OEDC Pays !

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their invention for $100,000. The corporate problem of the walking beam mechanism was best solved by Lawrence Kwan and Albert Li from Toronto. First prize in the Communications category was captured by Kevin Firth and Sheldon Davis from Waterloo, who spoke on the impact of robotics on industry and society.

The UofT Eng. Soc. was successful in its bid to host the 1982 OEDC. This will hopefully mean an increase in the number of UofT entries along with an improvement in the level of awareness of the competition.

Although the technical work of the majority of entrants was impressive, many of the presentations were sadly lacking. Poor presentation skills were most obvious in the Communication classes. In preparation for the competition, a set of general guidelines for presentation will be published in a future issue of the Cannon. Although it is rather early to consider a project to enter in next year's contest, those interested in helping organize the competition, in officiating, or in learning more about the OEDC are asked to contact John Voss or Joe Facca, through the Engineering Society.

Summer Jobs

The jobs listed here are summer employment opportunities. Space does not allow the printing of graduate openings. For more details on the positions available, and for application procedures, contact the Career Counselling and Placement Centre at 344 Bloor St. W. near Spadina.

Bema Industries Ltd. Geological engineers. Ask at the Summer Desk, CCPC.

Doran Engineering. Civil engineers. Ask at the Summer Desk, CCPC.

Eagle Transport Ltd. Civil or Mechanical, Chemical. Ask at the Summer Desk, CCPC.

Ian Martin Associates. Civils for survey work. Contact company directly at 862-0602, attention Mr. Reynolds.

North York Hydro. Third or fourth year Eng. Sci. Ask at the Summer Desk, CCPC.

Sudbury Hydro. Third Year Electrical in Power option. Ask at the Summer Desk, CCPC.

Trench Electric Ltd. Third year Electrical. Ask at the Summer Desk.

Xerox Research. First year Mechanical, Electrical; second or third year Electrical or Eng. Sci. Ask at the Summer Desk.

"No Choice" Dean Says

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mentioned that fourth year students can take the SCS course, but the present policy excludes continuing studies courses from academic credit.

Dean Miller concluded that in addition to the course becoming more widely accessible, a candidate taking the SCS course has only a several month gap between the course and the APEO exam, "there was no other reasonable course of action the faculty could take."